

* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 16:05:35 ON 28 MAY 2009

=> fil .bec

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.22

0.22

FILES 'MEDLINE, SCISEARCH, LIFESCI, BIOTECHDS, BIOSIS, EMBASE, HCAPLUS, NTIS, ESBIOBASE, BIOTECHNO, WPIDS' ENTERED AT 16:05:57 ON 28 MAY 2009
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11 FILES IN THE FILE LIST

=> s polyhydroxyalka? or polyhydroxybuty? or pha or phb or 3hb co

FILE 'MEDLINE'

783 POLYHYDROXYALKA?

275 POLYHYDROXYBUTY?

15868 PHA

1251 PHB

284 3HB

1497763 CO

106 3HB CO

(3HB(W)CO)

L1 17258 POLYHYDROXYALKA? OR POLYHYDROXYBUTY? OR PHA OR PHB OR 3HB CO

FILE 'SCISEARCH'

1814 POLYHYDROXYALKA?

757 POLYHYDROXYBUTY?

9487 PHA

2844 PHB

582 3HB

449788 CO

251 3HB CO

(3HB(W)CO)

L2 12764 POLYHYDROXYALKA? OR POLYHYDROXYBUTY? OR PHA OR PHB OR 3HB CO

FILE 'LIFESCI'

719 POLYHYDROXYALKA?

407 POLYHYDROXYBUTY?

6353 PHA

1035 PHB

200 "3HB"

100593 "CO"

84 3HB CO

("3HB"(W)"CO")

L3 7518 POLYHYDROXYALKA? OR POLYHYDROXYBUTY? OR PHA OR PHB OR 3HB CO

FILE 'BIOTECHDS'

901 POLYHYDROXYALKA?

182 POLYHYDROXYBUTY?

879 PHA

788 PHB

113 3HB

14307 CO

45 3HB CO

(3HB(W)CO)

L4 1820 POLYHYDROXYALKA? OR POLYHYDROXYBUTY? OR PHA OR PHB OR 3HB CO

FILE 'BIOSIS'

1229 POLYHYDROXYALKA?

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    472 POLYHYDROXYBUTY?
    16763 PHA
    1800 PHB
    351 3HB
    243901 CO
    144 3HB CO
        (3HB(W)CO)
L5      18968 POLYHYDROXYALKA? OR POLYHYDROXYBUTY? OR PHA OR PHB OR 3HB CO

FILE 'EMBASE'
    999 POLYHYDROXYALKA?
    280 POLYHYDROXYBUTY?
    15528 PHA
    1333 PHB
    291 3HB
    984499 CO
    117 3HB CO
        (3HB(W)CO)
L6      17080 POLYHYDROXYALKA? OR POLYHYDROXYBUTY? OR PHA OR PHB OR 3HB CO

FILE 'HCAPLUS'
    2784 POLYHYDROXYALKA?
    3924 POLYHYDROXYBUTY?
    12792 PHA
    4591 PHB
    714 3HB
    967658 CO
    303 3HB CO
        (3HB(W)CO)
L7      20002 POLYHYDROXYALKA? OR POLYHYDROXYBUTY? OR PHA OR PHB OR 3HB CO

FILE 'NTIS'
    8 POLYHYDROXYALKA?
    9 POLYHYDROXYBUTY?
    419 PHA
    39 PHB
    0 3HB
    37019 CO
    0 3HB CO
        (3HB(W)CO)
L8      463 POLYHYDROXYALKA? OR POLYHYDROXYBUTY? OR PHA OR PHB OR 3HB CO

FILE 'ESBIOBASE'
    851 POLYHYDROXYALKA?
    266 POLYHYDROXYBUTY?
    4214 PHA
    1033 PHB
    269 3HB
    153782 CO
    112 3HB CO
        (3HB(W)CO)
L9      5330 POLYHYDROXYALKA? OR POLYHYDROXYBUTY? OR PHA OR PHB OR 3HB CO

FILE 'BIOTECHNO'
    528 POLYHYDROXYALKA?
    150 POLYHYDROXYBUTY?
    4427 PHA
    697 PHB
    165 3HB
    52091 CO
    79 3HB CO
        (3HB(W)CO)

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L10      5240 POLYHYDROXYALKA? OR POLYHYDROXYBUTY? OR PHA OR PHB OR 3HB CO
FILE 'WPIDS'
      804 POLYHYDROXYALKA?
      900 POLYHYDROXYBUTY?
      1195 PHA
      599 PHB
      74 3HB
      326665 CO
      26 3HB CO
      (3HB(W)CO)
L11      2953 POLYHYDROXYALKA? OR POLYHYDROXYBUTY? OR PHA OR PHB OR 3HB CO

TOTAL FOR ALL FILES
L12      109396 POLYHYDROXYALKA? OR POLYHYDROXYBUTY? OR PHA OR PHB OR 3HB CO

=> s l12 and (feed?(3a)rate# or ferment?(3a)parameter#)
FILE 'MEDLINE'
      245482 FEED?
      1495166 RATE#
      3373 FEED?(3A)RATE#
      44978 FERMENT?
      431827 PARAMETER#
      273 FERMENT?(3A)PARAMETER#
L13      22 L1 AND (FEED?(3A)RATE# OR FERMENT?(3A)PARAMETER#)

FILE 'SCISEARCH'
      373195 FEED?
      1708468 RATE#
      12696 FEED?(3A)RATE#
      64384 FERMENT?
      1093969 PARAMETER#
      723 FERMENT?(3A)PARAMETER#
L14      37 L2 AND (FEED?(3A)RATE# OR FERMENT?(3A)PARAMETER#)

FILE 'LIFESCI'
      109296 FEED?
      340468 RATE#
      4404 FEED?(3A)RATE#
      32927 FERMENT?
      110990 PARAMETER#
      385 FERMENT?(3A)PARAMETER#
L15      26 L3 AND (FEED?(3A)RATE# OR FERMENT?(3A)PARAMETER#)

FILE 'BIOTECHDS'
      17294 FEED?
      44742 RATE#
      1197 FEED?(3A)RATE#
      63953 FERMENT?
      11940 PARAMETER#
      434 FERMENT?(3A)PARAMETER#
L16      28 L4 AND (FEED?(3A)RATE# OR FERMENT?(3A)PARAMETER#)

FILE 'BIOSIS'
      426228 FEED?
      1571984 RATE#
      13110 FEED?(3A)RATE#
      94172 FERMENT?
      466831 PARAMETER#
      811 FERMENT?(3A)PARAMETER#
L17      31 L5 AND (FEED?(3A)RATE# OR FERMENT?(3A)PARAMETER#)

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FILE 'EMBASE'
  194469 FEED?
  1309073 RATE#
    2828 FEED?(3A)RATE#
    32924 FERMENT?
    467340 PARAMETER#
      254 FERMENT?(3A)PARAMETER#
L18      19 L6 AND (FEED?(3A)RATE# OR FERMENT?(3A)PARAMETER#)

FILE 'HCAPLUS'
  586726 FEED?
  2451835 RATE#
    24132 FEED?(3A)RATE#
    212645 FERMENT?
    132452 FERMN
    246733 FERMENT?
      (FERMENT? OR FERMN)
    1324526 PARAMETER#
      1556 FERMENT?(3A)PARAMETER#
L19      48 L7 AND (FEED?(3A)RATE# OR FERMENT?(3A)PARAMETER#)

FILE 'NTIS'
  48523 FEED?
  187888 RATE#
    1296 FEED?(3A)RATE#
    2579 FERMENT?
    136764 PARAMETER#
      18 FERMENT?(3A)PARAMETER#
L20      0 L8 AND (FEED?(3A)RATE# OR FERMENT?(3A)PARAMETER#)

FILE 'ESBIOBASE'
  112077 FEED?
  490595 RATE#
    4120 FEED?(3A)RATE#
    25350 FERMENT?
    179075 PARAMETER#
      354 FERMENT?(3A)PARAMETER#
L21      25 L9 AND (FEED?(3A)RATE# OR FERMENT?(3A)PARAMETER#)

FILE 'BIOTECHNO'
  24649 FEED?
  166001 RATE#
    876 FEED?(3A)RATE#
    23461 FERMENT?
    60195 PARAMETER#
      212 FERMENT?(3A)PARAMETER#
L22      13 L10 AND (FEED?(3A)RATE# OR FERMENT?(3A)PARAMETER#)

FILE 'WPIDS'
  803519 FEED?
  677038 RATE#
    18742 FEED?(3A)RATE#
    65816 FERMENT?
    44 FERMN
    65828 FERMENT?
      (FERMENT? OR FERMN)
    255492 PARAMETER#
      118 FERMENT?(3A)PARAMETER#
L23      14 L11 AND (FEED?(3A)RATE# OR FERMENT?(3A)PARAMETER#)

TOTAL FOR ALL FILES
L24      263 L12 AND (FEED?(3A) RATE# OR FERMENT?(3A) PARAMETER#)

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=> s L24 not 2004-2009/PY
FILE 'MEDLINE'
3617229 2004-2009/PY
L25 12 L13 NOT 2004-2009/PY

FILE 'SCISEARCH'
6763499 2004-2009/PY
(20040000-20099999/PY)
L26 17 L14 NOT 2004-2009/PY

FILE 'LIFESCI'
987314 2004-2009/PY
L27 11 L15 NOT 2004-2009/PY

FILE 'BIOTECHDS'
126371 2004-2009/PY
L28 16 L16 NOT 2004-2009/PY

FILE 'BIOSIS'
3182607 2004-2009/PY
L29 17 L17 NOT 2004-2009/PY

FILE 'EMBASE'
3084904 2004-2009/PY
L30 15 L18 NOT 2004-2009/PY

FILE 'HCAPLUS'
7311518 2004-2009/PY
L31 25 L19 NOT 2004-2009/PY

FILE 'NTIS'
91595 2004-2009/PY
L32 0 L20 NOT 2004-2009/PY

FILE 'ESBIODBASE'
1825208 2004-2009/PY
L33 14 L21 NOT 2004-2009/PY

FILE 'BIOTECHNO'
586 2004-2009/PY
L34 13 L22 NOT 2004-2009/PY

FILE 'WPIDS'
6303593 2004-2009/PY
L35 6 L23 NOT 2004-2009/PY

TOTAL FOR ALL FILES
L36 146 L24 NOT 2004-2009/PY

=> dup rem L36
PROCESSING COMPLETED FOR L36
L37 57 DUP REM L36 (89 DUPLICATES REMOVED)

=> d tot

L37 ANSWER 1 OF 57 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN
TI Production of 2-hydroxyacid-containing polymer for forming medical
device, involves expressing in organism exogenous genes encoding
polyhydroxyalkanoate synthase and enzyme(s) for the production of
2-hydroxyacyl Coenzyme-A;
vector-mediated polyhydroxyalkanoate-synthase gene transfer

and expression in host cell for recombinant protein production and polymer preparation

AU MARTIN D P; SKRALY F A
 AN 2004-10980 BIOTECHDS
 PI US 20030211131 13 Nov 2003

L37 ANSWER 2 OF 57 HCAPLUS COPYRIGHT 2009 ACS on STN
 TI Effect of periodic feeding in sequencing batch reactor on substrate uptake and storage rates by a pure culture of *Amaricoccus kaplicensis*
 SO Water Research (2003), 37(11), 2764-2772
 CODEN: WATRAG; ISSN: 0043-1354
 AU Aulenta, Federico; Dionisi, Davide; Majone, Mauro; Parisi, Antonio; Ramadori, Roberto; Tandoi, Valter
 AN 2003:357761 HCAPLUS
 DN 139:184703

L37 ANSWER 3 OF 57 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN
 TI Evaluation of spectrofluorometry as a tool for estimation in fed-batch fermentations;
 Alcaligenes eutrophus fermentation for poly-beta-hydroxybutyrate production and process optimization
 SO BIOTECHNOLOGY AND BIOENGINEERING; (2003) 83, 1, 104-111 ISSN: 0006-3592
 AU HAGEDORN A; LEGGE RL; BUDMAN H
 AN 2003-15154 BIOTECHDS

L37 ANSWER 4 OF 57 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN
 TI Production of polyhydroxyalkanoate from starch and/or derivatives for making polymers and copolymers, by incubating an polyhydroxyalkanoate-producing microorganism in medium containing starch and/or derivatives;
 polymer preparation by bacterium or yeast fermentation for drug delivery, orthopedic implant, tissue engineering and cardiovascular disorder therapy
 AU LAPOINTE R; LAMBERT A; SAVARD L
 AN 2002-17381 BIOTECHDS
 PI US 20020031812 14 Mar 2002

L37 ANSWER 5 OF 57 MEDLINE on STN DUPLICATE 1
 TI Effect of Vitreoscilla hemoglobin biosynthesis in *Escherichia coli* on production of poly(beta-hydroxybutyrate) and fermentative parameters.
 SO FEMS microbiology letters, (2002 Sep 10) Vol. 214, No. 2, pp. 223-7. Journal code: 7705721. ISSN: 0378-1097.
 AU Yu Huimin; Shi Yue; Zhang Yanping; Yang Shengli; Shen Zhongyao
 AN 2002490888 MEDLINE

L37 ANSWER 6 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on STN
 AN 2002261226 ESBIOBASE
 TI Effect of Vitreoscilla hemoglobin biosynthesis in *Escherichia coli* on production of poly(beta-hydroxybutyrate) and fermentative parameters
 AU Yu, Huimin; Shi, Yue; Zhang, Yanping; Shen, Zhongyao; Yang, Shengli
 CS Yu, Huimin; Shi, Yue; Zhang, Yanping; Shen, Zhongyao (Department of Chemical Engineering, Institute of Biochemical Engineering, Tsinghua University, Beijing 100084 (CN)); Yang, Shengli (Shanghai Research Center of Biotechnology, Academic Sinica, Shanghai 200233 (CN))
 EMAIL: yuhm@mail.tsinghua.edu.cn
 SO FEMS Microbiology Letters (10 Sep 2002) Volume 214, Number 2, pp. 223-227, 12 refs.
 CODEN: FMLED7 ISSN: 0378-1097

DOI: 10.1016/S0378-1097(02)00887-X
PUI S037810970200887X
CY Netherlands
DT Journal; Article
LA English
SL English
ED Entered STN: 1 Feb 2009
Last updated on STN: 1 Feb 2009

L37 ANSWER 7 OF 57 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Quality control of polyhydroxyalkanoates in fed-batch culture
based on a metabolic reaction model
SO Computer Applications in Biotechnology 2001: Modelling, Monitoring and
Control of Biotechnical Processes, A Proceedings Volume from the IFAC
International Conference, 8th, Quebec City, QC, Canada, June 24-27, 2001
(2002), Meeting Date 2001, 201-206. Editor(s): Dochain, Denis; Perrier,
Michel. Publisher: Pergamon Press, Oxford, UK.
CODEN: 69DEI4; ISBN: 0-08-043681-1
AU Shimizu, Hiroshi; Chanprateep, Suchada; Hirunruttanakorn, Adisak; Kikuya,
Kensuke; Shioya, Suteaki
AN 2002:784810 HCAPLUS
DN 138:3707

L37 ANSWER 8 OF 57 MEDLINE on STN DUPLICATE 2
TI The storage of acetate under anoxic conditions.
SO Water research, (2001 Aug) Vol. 35, No. 11, pp. 2661-8.
Journal code: 0105072. ISSN: 0043-1354.
AU Dionisi D; Majone M; Ramadori R; Beccari M
AN 2002020788 MEDLINE

L37 ANSWER 9 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on
STN
AN 2001122786 ESBIOWASE
TI The storage of acetate under anoxic conditions
AU Dionisi, D.; Majone, M.; Beccari, M.; Ramadori, R.
CS Dionisi, D.; Majone, M.; Beccari, M. (Department of Chemistry, Univ.
Sapienza, Piazza A. M., Rome (IT)); Ramadori, R. (Water Research
Institute, Natl. Res. Cncl., Via Reno, 1, 00198, Rome (IT))
EMAIL: majone@axrma.uniroma1.it
SO Water Research (Aug 2001) Volume 35, Number 11, pp. 2661-2668, 34 refs.
CODEN: WATRAG ISSN: 0043-1354
DOI: 10.1016/S0043-1354(00)00562-5
PUI S0043135400005625
CY United Kingdom
DT Journal; Article
LA English
SL English
ED Entered STN: 1 Feb 2009
Last updated on STN: 1 Feb 2009

L37 ANSWER 10 OF 57 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on
STN
TI Immunostimulatory effects of anionic alkali mineral complex solution
Barodon in porcine lymphocytes.
SO Abstracts of the General Meeting of the American Society for Microbiology,
(2001) Vol. 101, pp. 747-748. print.
Meeting Info.: 101st General Meeting of the American Society for
Microbiology. Orlando, FL, USA. May 20-24, 2001. American Society for
Microbiology.
ISSN: 1060-2011.
AU Yoo, B. [Reprint author]; Choi, S.; Kim, S.; Yang, S.; Koo, H.; Seo, S.
[Reprint author]; Park, B.; Yoo, H.; Park, Y.

AN 2002:233447 BIOSIS

L37 ANSWER 11 OF 57 SCISEARCH COPYRIGHT (c) 2009 The Thomson Corporation on
STN DUPLICATE 3
TI Food availability and immune capacity in serin (*Serinus serinus*) nestlings
SO BEHAVIORAL ECOLOGY AND SOCIOBIOLOGY, (APR 2001) Vol. 49, No. 5, pp.
333-339.
ISSN: 0340-5443.
AU Hoi-Leitner M (Reprint); Romero-Pujante M; Hoi H; Pavlova A
AN 2001:387487 SCISEARCH

L37 ANSWER 12 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on
STN
AN 2001106070 ESBIOBASE
TI Food availability and immune capacity in serin (*Serinus serinus*)
nestlings
AU Hoi-Leitner, M.; Romero-Pujante, M.; Hoi, H.; Pavlova, A.
CS Hoi-Leitner, M.; Romero-Pujante, M.; Hoi, H.; Pavlova, A. (Konrad Lorenz
Inst. Compar. Ethology, Savoyenstrasse 1a, 1160 Vienna (AT))
SO Behavioral Ecology and Sociobiology (2001) Volume 49, Number 5, pp.
333-339, 57 refs.
CODEN: BESOD6 ISSN: 0340-5443
DOI: 10.1007/s002650000310
CY Germany
DT Journal; Article
LA English
SL English
ED Entered STN: 1 Feb 2009
Last updated on STN: 1 Feb 2009

L37 ANSWER 13 OF 57 MEDLINE on STN DUPLICATE 4
TI Multivariable control of alcohol concentrations in the production of
polyhydroxyalkanoates (PHAs) by *Paracoccus denitrificans*.
SO Biotechnology and bioengineering, (2001 Jul 20) Vol. 74, No. 2, pp.
116-24.
Journal code: 7502021. ISSN: 0006-3592.
AU Chanprateep S; Abe N; Shimizu H; Yamane T; Shioya S
AN 2001276729 MEDLINE

L37 ANSWER 14 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on
STN
AN 2001151014 ESBIOBASE
TI Multivariable control of alcohol concentrations in the production of
polyhydroxyalkanoates (PHAs) by *Paracoccus denitrificans*
AU Chanprateep, Suchada; Abe, Naoya; Shimizu, Hiroshi; Shioya, Suteaki;
Yamane, Tsuneo
CS Chanprateep, Suchada; Abe, Naoya; Shimizu, Hiroshi; Shioya, Suteaki
(Department of Biotechnology, Graduate School of Engineering, Osaka
University, 2-1 Yamadaoka, Suita, Osaka 565-0871 (JP)); Yamane, Tsuneo
(Department of Applied Biological Mechanism and Functions, Graduate
School of Agricultural Science, Nagoya University, Furo-cho, Chikusa-ku,
Nagoya 464-8601 (JP))
EMAIL: shioya@bio.eng.osaka-u.ac.jp
SO Biotechnology and Bioengineering (20 Jul 2001) Volume 74, Number 2, pp.
116-124, 25 refs.
CODEN: BIBIAU ISSN: 0006-3592
DOI: 10.1002/bit.1101
CY United States of America
DT Journal; Article
LA English
SL English
ED Entered STN: 1 Feb 2009

Last updated on STN: 1 Feb 2009

- L37 ANSWER 15 OF 57 MEDLINE on STN DUPLICATE 5
TI Production of PHA from starchy wastewater via organic acids.
SO Journal of biotechnology, (2001 Mar 30) Vol. 86, No. 2, pp. 105-12.
Journal code: 8411927. ISSN: 0168-1656.
AU Yu J
AN 2001259766 MEDLINE
- L37 ANSWER 16 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on
STN
AN 2001059525 ES BIOBASE
TI Production of PHA from starchy wastewater via organic acids
AU Yu, Jian
CS Yu, Jian (Department of Chemical Engineering, Hong Kong University of
Science and Technology, Clear Water Bay, Hong Kong (HK))
EMAIL: kejianyu@ust.hk
SO Journal of Biotechnology (30 Mar 2001) Volume 86, Number 2, pp. 105-112,
9 refs.
CODEN: JBITD4 ISSN: 0168-1656
DOI: 10.1016/S0168-1656(00)00405-3
PUI S0168165600004053
CY Netherlands
DT Journal; Article
LA English
SL English
ED Entered STN: 1 Feb 2009
Last updated on STN: 1 Feb 2009
- L37 ANSWER 17 OF 57 SCISEARCH COPYRIGHT (c) 2009 The Thomson Corporation on
STN DUPLICATE 6
TI Feeding strategy of propionic acid for production of
poly(3-hydroxybutyrate-co-3-hydroxyvalerate) with *Ralstonia eutropha*
SO BIOCHEMICAL ENGINEERING JOURNAL, (SEP 2001) Vol. 8, No. 2, pp. 103-110.
ISSN: 1369-703X.
AU Yu J (Reprint); Du G C C; Chen J; Lun S Y
AN 2001:618525 SCISEARCH
- L37 ANSWER 18 OF 57 MEDLINE on STN
TI Immunostimulatory effects of anionic alkali mineral complex solution
Barodon in porcine lymphocytes.
SO Journal of veterinary science (Suwon-si, Korea), (2001 Apr) Vol. 2, No. 1,
pp. 15-24.
Journal code: 100964185. ISSN: 1229-845X.
AU Yoo B W; Choi S I; Kim S H; Yang S J; Koo H C; Seo S H; Park B K; Yoo H S;
Park Y H
AN 2003536016 MEDLINE
- L37 ANSWER 19 OF 57 WPIDS COPYRIGHT 2009 THOMSON REUTERS on STN
TI Commercial production of 4-hydroxybenzoic acid, useful in producing low
cost liquid crystal polymers, comprises using mutant *Escherichia coli*
cells, which overproduce chorismate, transformed with the pMCP2 plasmid
PI US 6030819 A 20000229 (200021)* EN 8[3]
WO 2000018943 A1 20000406 (200025) EN
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: JP SG
IN AMARATUNGA M; JOHNSON B F; LOBOS J H; WILLIAMS E D
- L37 ANSWER 20 OF 57 MEDLINE on STN DUPLICATE 7
TI Accumulation of Poly[(R)-3-hydroxyalkanoates] in *Pseudomonas oleovorans*
during growth with octanoate in continuous culture at different dilution
rates.

SO Applied and environmental microbiology, (2000 Aug) Vol. 66, No. 8, pp.
3408-14.
Journal code: 7605801. ISSN: 0099-2240.
Report No.: NLM-PMC92163.

AU Durner R; Witholt B; Egli T
AN 2001075781 MEDLINE

L37 ANSWER 21 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on
STN
AN 2000184388 ESBIOBASE
TI Accumulation of poly[(R)-3-hydroxyalkanoates] in *Pseudomonas oleovorans*
during growth with octanoate in continuous culture at different dilution
rates
AU Durner, R.; Witholt, B.; Egli, T.
CS Durner, R.; Witholt, B.; Egli, T. (Department of Microbiology, EAWAG,
Überlandstrasse 133, CH-8600 Dübendorf (CH))
SO Applied and Environmental Microbiology (2000) Volume 66, Number 8, pp.
3408-3414, 42 refs.
CODEN: AEMIDF ISSN: 0099-2240
DOI: 10.1128/AEM.66.8.3408-3414.2000
CY United States of America
DT Journal; Article
LA English
SL English
ED Entered STN: 31 Jan 2009
Last updated on STN: 31 Jan 2009

L37 ANSWER 22 OF 57 SCISEARCH COPYRIGHT (c) 2009 The Thomson Corporation on
STN DUPLICATE 8
TI Poly(beta-hydroxybutyric acid) thermoplastic production by *Alcaligenes*
lotus: Behavior of fed-batch cultures
SO BIOPROCESS ENGINEERING, (MAY 2000) Vol. 22, No. 5, pp. 441-449.
ISSN: 0178-515X.
AU Chisti Y (Reprint); Grothe E
AN 2000:395075 SCISEARCH

L37 ANSWER 23 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on
STN
AN 2000120025 ESBIOBASE
TI Poly(beta-hydroxybutyric acid) thermoplastic production by *Alcaligenes*
lotus: Behavior of fed-batch cultures
AU Grothe, E.; Chisti, Y.
CS Grothe, E. (Department of Chemical Engineering, University of Waterloo,
Waterloo, Ont. N2L 3G1 (CA)); Chisti, Y. (Department of Chemical
Engineering, University of Almeria, E-04071 Almeria (ES))
SO Bioprocess Engineering (2000) Volume 22, Number 5, pp. 441-449, 30 refs.
CODEN: BIENUE ISSN: 0178-515X
CY Germany
DT Journal; Article
LA English
SL English
ED Entered STN: 31 Jan 2009
Last updated on STN: 31 Jan 2009

L37 ANSWER 24 OF 57 MEDLINE on STN DUPLICATE 9
TI Effect of controlling lactate concentration and periodic change in DO
concentration on fermentation characteristics of a mixed culture of
Lactobacillus delbrueckii and *Ralstonia eutropha* for PHB
production.
SO Journal of bioscience and bioengineering, (2000) Vol. 89, No. 4, pp.
323-8.
Journal code: 100888800. ISSN: 1389-1723.

AU Tohyama M; Takagi S; Shimizu K
AN 2005557065 MEDLINE

L37 ANSWER 25 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on
STN
AN 2000119943 ESBIOBASE
TI Effect of controlling lactate concentration and periodic change in DO
concentration on fermentation characteristics of a mixed culture of
Lactobacillus delbrueckii and Ralstonia eutropha for PHB
production
AU Tohyama, Masayuki; Takagi, Seiji; Shimizu, Kazuyuki
CS Tohyama, Masayuki; Takagi, Seiji; Shimizu, Kazuyuki (Dept. of
Biochemical Engineering, Kyushu Institute of Technology, Iizuka, Fukuoka
820-8502 (JP))
SO Journal of Bioscience and Bioengineering (2000) Volume 89, Number 4, pp.
323-328, 17 refs.
CODEN: JBBIF6 ISSN: 1389-1723
DOI: 10.1016/S1389-1723(00)88953-7
CY Japan
DT Journal; Article
LA English
SL English
ED Entered STN: 31 Jan 2009
Last updated on STN: 31 Jan 2009

L37 ANSWER 26 OF 57 MEDLINE on STN DUPLICATE 10
TI Effects of nitrogen feeding on the accumulation of
poly-beta-hydroxybutyrate with Alcaligenes eutrophus.
SO Wei sheng wu xue bao = Acta microbiologica Sinica, (2000 Jun) Vol. 40, No.
3, pp. 290-5.
Journal code: 21610860R. ISSN: 0001-6209.
AU Du G; Chen J; Yin H; Gao H; Lun S
AN 2003041763 MEDLINE

L37 ANSWER 27 OF 57 SCISEARCH COPYRIGHT (c) 2009 The Thomson Corporation on
STN DUPLICATE 11
TI Effect of total nutrient feed on production of poly-3-hydroxybutyrate by
Methylobacterium sp ZP24 grown on sugars
SO JOURNAL OF INDUSTRIAL MICROBIOLOGY & BIOTECHNOLOGY, (NOV 2000) Vol. 25,
No. 5, pp. 276-279.
ISSN: 1367-5435.
AU Desai A J (Reprint); Yellore V S; Ghatnekar M S; Pai J S
AN 2001:62630 SCISEARCH

L37 ANSWER 28 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on
STN
AN 2001013635 ESBIOBASE
TI Effect of total nutrient feed on production of poly-3-hydroxybutyrate by
Methylobacterium sp. ZP24 grown on sugars
AU Yellore, V.S.; Desai, A.J.; Ghatnekar, M.S.; Pai, J.S.
CS Yellore, V.S.; Desai, A.J. (Department of Microbiology and Biotechnology
Centre, Faculty of Science, Maharaja Sayajirao University of Baroda,
Baroda 390002 (IN)); Ghatnekar, M.S.; Pai, J.S. (Division of Foods and
Fermentation Technology, University Department of Chemical Technology,
Matunga 400019 (IN))
SO Journal of Industrial Microbiology and Biotechnology (2000) Volume 25,
Number 5, pp. 276-279, 20 refs.
CODEN: JIMBFL ISSN: 1367-5435
DOI: 10.1038/sj.jim.7000073
CY United Kingdom
DT Journal; Article
LA English

SL English
ED Entered STN: 1 Feb 2009
Last updated on STN: 1 Feb 2009

L37 ANSWER 29 OF 57 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN
TI Kinetic analysis on inhibited growth and poly(3-hydroxybutyrate)
formation of *Alcaligenes eutrophus* on acetate under nutrient-rich
conditions;
effect of acetic acid on poly-beta-hydroxybutyrate production
SO Process Biochem.; (2000) 36, 3, 201-07
CODEN: PBCHE5 ISSN: 0032-9592
AU Wang J; *Yu J
AN 2000-13866 BIOTECHDS

L37 ANSWER 30 OF 57 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN
TI Continuous microbiological production of biodegradable polymer, e.g.
polyhydroxybutyric acid;
poly-beta-hydroxybutyrate production
AU Babel W; Maskow T
AN 2000-01367 BIOTECHDS
PI DE 19820168 4 Nov 1999

L37 ANSWER 31 OF 57 SCISEARCH COPYRIGHT (c) 2009 The Thomson Corporation on
STN DUPLICATE 13
TI Estimation of residual biomass, PHB, and nutrient concentrations
by supplied amount of ammonia solution in fermentation of *Alcaligenes*
latus
SO JOURNAL OF MICROBIOLOGY AND BIOTECHNOLOGY, (OCT 1999) Vol. 9, No. 5, pp.
554-561.
ISSN: 1017-7825.
AU Lee Y W (Reprint); Yamane T
AN 1999:836273 SCISEARCH

L37 ANSWER 32 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on
STN
AN 2000009838 ESBIODASE
TI Estimation of residual biomass, PHB, and nutrient
concentrations by supplied amount of ammonia solution in fermentation of
Alcaligenes latus
AU Lee, Yong-Woo; Yamane, Tsuneo
CS Lee, Yong-Woo (Res. Inst. of Biodegradable Polymers, Dept. of
Biochemical Engineering, Yanbian Univ. of Sci. and Technology, Beishan
St., Yanji, Jilin 133,000 (CN)); Yamane, Tsuneo (Dept. of Applied
Biological Sciences, School of Bioagricultural Sciences, Nagoya
University, Furu-cho, Chikusa-ku, Nagoya 4,648,610 (JP))
EMAIL: ywlee@ybust.edu.cn
SO Journal of Microbiology and Biotechnology (Oct 1999) Volume 9, Number 5,
pp. 554-561, 23 refs.
CODEN: JOMBES ISSN: 1017-7825
CY Republic of Korea
DT Journal; Article
LA English
SL English
ED Entered STN: 31 Jan 2009
Last updated on STN: 31 Jan 2009

L37 ANSWER 33 OF 57 MEDLINE on STN DUPLICATE 14
TI Closed-loop control of bacterial high-cell-density fed-batch cultures:
production of mcl-PHAS by *Pseudomonas putida* KT2442 under single-substrate
and cofeeding conditions.
SO Biotechnology and bioengineering, (1999 Nov 5) Vol. 65, No. 3, pp. 306-15.
Journal code: 7502021. ISSN: 0006-3592.

AU Kellerhals M B; Kessler B; Witholt B
AN 1999415709 MEDLINE

L37 ANSWER 34 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on
STN
AN 1999228392 ESBIOBASE
TI Closed-loop control of bacterial high-cell-density fed-batch cultures:
Production of mcl-PHAs by *Pseudomonas putida* KT2442 under
single-substrate and cofeeding conditions
AU Kellerhals, Michele B.; Kessler, Birgit; Witholt, Bernard
CS Kellerhals, Michele B.; Kessler, Birgit; Witholt, Bernard (Institute of
Biotechnology, ETH Honggerberg, CH-8093 Zurich (CH))
EMAIL: bw@biotech.biol.ethz.ch
SO Biotechnology and Bioengineering (5 Nov 1999) Volume 65, Number 3, pp.
306-315, 30 refs.
CODEN: BIBIAU ISSN: 0006-3592
DOI: 10.1002/(SICI)1097-0290(19991105)65:3<306::AID-BIT8>3.0.CO;2-0
CY United States of America
DT Journal; Article
LA English
SL English
ED Entered STN: 31 Jan 2009
Last updated on STN: 31 Jan 2009

L37 ANSWER 35 OF 57 MEDLINE on STN DUPLICATE 15
TI Production of poly(3-hydroxybutyrate) and its copolymer
poly(3-hydroxybutyrate-co-3-hydroxyvalerate) by *Erwinia* sp. USMI-20.
SO International journal of biological macromolecules, (1999 Jun-Jul) Vol.
25, No. 1-3, pp. 95-104.
Journal code: 7909578. ISSN: 0141-8130.
AU Majid M I; Akmal D H; Few L L; Agustien A; Toh M S; Samian M R; Najimudin
N; Azizan M N
AN 1999343044 MEDLINE

L37 ANSWER 36 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on
STN
AN 1999149588 ESBIOBASE
TI Production of poly(3-hydroxybutyrate) and its copolymer poly(3-
hydroxybutyrate-co-3-hydroxyvalerate) by *Erwinia* sp. USMI-20
AU Majid, M.I.A.; Akmal, D.H.; Few, L.L.; Agustien, A.; Toh, M.S.; Samian,
M.R.; Najimudin, N.; Azizan, M.N.
CS Majid, M.I.A.; Akmal, D.H. (National Poison Centre, Universiti Sains
Malaysia, 11800 M., Penang (MY)); Few, L.L.; Agustien, A.; Toh, M.S.;
Samian, M.R.; Najimudin, N.; Azizan, M.N. (School of Biological
Sciences, Universiti Sains Malaysia, 11800 M., Penang (MY))
EMAIL: misa@usm.my
SO International Journal of Biological Macromolecules (Jun 1999) Volume 25,
Number 1-3, pp. 95-104, 15 refs.
CODEN: IJBMDR ISSN: 0141-8130
DOI: 10.1016/S0141-8130(99)00020-3
PUI S0141813099000203
CY Netherlands
DT Journal; (Conference Paper)
LA English
SL English
ED Entered STN: 31 Jan 2009
Last updated on STN: 31 Jan 2009

L37 ANSWER 37 OF 57 SCISEARCH COPYRIGHT (c) 2009 The Thomson Corporation on
STN DUPLICATE 16
TI Control of a mixed culture of *Lactobacillus delbrueckii* and *ralstonia*
eutropha for the production of PHB from glucose via lactate

SO BIOCHEMICAL ENGINEERING JOURNAL, (SEP 1999) Vol. 4, No. 1, pp. 45-53.
ISSN: 1369-703X.
AU Shimizu K (Reprint); Tohyama M
AN 1999:728373 SCISEARCH

L37 ANSWER 38 OF 57 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Studies on the production of poly- β -hydroxybutyric acid by fed-batch culture with DO-stat method employing *Alcaligenes eutrophus* mutant B510
SO Huanjing Kexue Xuebao (1999), 19(1), 6-10
CODEN: HKXUDL; ISSN: 0253-2468
AU Zhuang, Guoqiang; Li, Aiyang; Wen, Xin; Qi, Qingsheng; Xu, Ping; Qu, Yinbo
AN 1999:104227 HCAPLUS
DN 130:236524

L37 ANSWER 39 OF 57 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Process for production of bacterial cells containing poly-3-hydroxybutyric acid
SO U.S., 12 pp., Cont.-in-part of U.S. Ser. No. 298,428, abandoned.
CODEN: USXXAM
IN Minagawa, Shunichiro; Imagawa, Shigeki; Terao, Iwao; Tahara, Torakazu
AN 1997:616972 HCAPLUS
DN 127:233632
OREF 127:45591a,45594a

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5667996	A	19970916	US 1995-507576	19950726
JP 07075590	A	19950320	JP 1993-225899	19930910
JP 07099984	A	19950418	JP 1993-250674	19931006
JP 07099985	A	19950418	JP 1993-250675	19931006

L37 ANSWER 40 OF 57 WPIDS COPYRIGHT 2009 THOMSON REUTERS on STN
TI Magnetic card, IC card processing equipment - has pulse switching circuit that selects signals which are fed to external interruption type input terminal element and card feed rate counter circuit of CPU
PI JP 09062795 A 19970307 (199720)* JA 9[7]
JP 3178996 B2 20010625 (200138) JA 9
IN TOKITA M

L37 ANSWER 41 OF 57 MEDLINE on STN DUPLICATE 17
TI Experimental optimization of fed-batch culture for poly-beta-hydroxybutyric acid production.
SO Biotechnology and bioengineering, (1997 Dec 20) Vol. 56, No. 6, pp. 697-705.
Journal code: 7502021. ISSN: 0006-3592.
AU Lee J H; Hong J; Lim H C
AN 2008464250 IN-PROCESS

L37 ANSWER 42 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on STN
AN 1997262115 ESBIIOBASE
TI Experimental optimization of fed-batch culture for poly- β -hydroxybutyric acid production
AU Lee, Jung Heon; Hong, Juan; Lim, Henry C.
CS Lee, Jung Heon; Hong, Juan; Lim, Henry C. (Dept. of Chem. and Biochem. Eng., University of California, Irvine, CA 92697-2575 (US))
EMAIL: hclim@uci.edu
SO Biotechnology and Bioengineering (20 Dec 1997) Volume 56, Number 6, pp. 697-705, 17 refs.
CODEN: BIBIAU ISSN: 0006-3592
DOI: 10.1002/(SICI)1097-0290(19971220)56:6<697::AID-BIT13>3.0.CO;2-5
Published by: John Wiley & Sons Inc

CY United States of America
DT Journal; Article
LA English
SL English
ED Entered STN: 31 Jan 2009
Last updated on STN: 31 Jan 2009

L37 ANSWER 43 OF 57 MEDLINE on STN DUPLICATE 18
TI A comparison of parenteral hyperalimentation and early enteral feeding
regarding systemic immunity after major hepatic resection--the results of
a randomized prospective study.
SO Hepato-gastroenterology, (1997 Jan-Feb) Vol. 44, No. 13, pp. 205-9.
Journal code: 8007849. ISSN: 0172-6390.
AU Shirabe K; Matsumata T; Shimada M; Takenaka K; Kawahara N; Yamamoto K;
Nishizaki T; Sugimachi K
AN 1997211147 MEDLINE

L37 ANSWER 44 OF 57 Elsevier Biobase COPYRIGHT 2009 Elsevier Science B.V. on
STN
AN 1997054164 ESBIODBASE
TI A comparison of parenteral hyperalimentation and early enteral feeding
regarding systemic immunity after major hepatic resection - The results
of a randomized prospective study
AU Shirabe, Ken; Matsumata, Takashi; Shimada, Mitsuo; Takenaka, Kenji;
Kawahara, Naoyuki; Yamamoto, Kazuharu; Nishizaki, Takashi; Sugimachi,
Keizo
CS Shirabe, Ken; Matsumata, Takashi; Shimada, Mitsuo; Takenaka, Kenji;
Kawahara, Naoyuki; Yamamoto, Kazuharu; Nishizaki, Takashi; Sugimachi,
Keizo (Department of Surgery II, Faculty of Medicine, Kyushu University,
Fukuoka 812 (JP), 3-1-1, Maidashi, Higashi-ku, Fukuoka, 812 (JP))
SO Hepato-Gastroenterology (1997) Volume 44, Number 13, pp. 205-209, 22
refs.
CODEN: HEGAD4 ISSN: 0172-6390
CY Germany
DT Journal; Article
LA English
SL English
ED Entered STN: 31 Jan 2009
Last updated on STN: 31 Jan 2009

L37 ANSWER 45 OF 57 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN
TI Production of poly-beta-hydroxybutyrate (PHB) by fed-batch
fermentation using hollow fiber membrane system;
polymer production by Alcaligenes eutrophus
SO J.Chem.Eng.Jpn.; (1996) 29, 5, 893-97
CODEN: JCEJAC ISSN: 0021-9592
AU Oh J T; Kim W S
AN 1996-14972 BIOTECHDS

L37 ANSWER 46 OF 57 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN
TI Preparation of poly-beta-hydroxybutyric acid polymers;
systems control of Methylobacterium extorquens two-stage fermentation
on methanol with N-starvation
AU Groleau D; Bourque D; Pomerleau Y
AN 1995-12194 BIOTECHDS
PI US 5434062 18 Jul 1995

L37 ANSWER 47 OF 57 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Process for production of bacterial cells containing poly-3-hydroxybutyric
acid.
SO Eur. Pat. Appl., 18 pp.
CODEN: EPXXDW

IN Minagawa, Shunichiro; Imagawa, Shigeki; Terao, Iwao; Tahara, Torakazu
AN 1995:506331 HCAPLUS
DN 122:237934
OREF 122:43479a,43482a

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 643138	A2	19950315	EP 1994-114108	19940908
EP 643138	A3	19980114		
EP 643138	B1	20030312		
R: DE, FR, GB, IT				
JP 07075590	A	19950320	JP 1993-225899	19930910
JP 07099984	A	19950418	JP 1993-250674	19931006
JP 07099985	A	19950418	JP 1993-250675	19931006

L37 ANSWER 48 OF 57 SCISEARCH COPYRIGHT (c) 2009 The Thomson Corporation on STN
TI PRODUCTION OF POLY(BETA-HYDROXYBUTYRATE-CO-BETA-HYDROXYVALERATE) BY
2-STAGE FED-BATCH FERMENTATION OF ALCALIGENES-EUTROPHUS
SO JOURNAL OF MICROBIOLOGY AND BIOTECHNOLOGY, (OCT 1995) Vol. 5, No. 5, pp.
292-296.
ISSN: 1017-7825.
AU LEE I Y (Reprint); KIM G J; SHIN Y C; CHANG H N; PARK Y H
AN 1995:761274 SCISEARCH

L37 ANSWER 49 OF 57 WPIDS COPYRIGHT 2009 THOMSON REUTERS on STN
TI Polyester compsn. comprising two poly:hydroxy-alkanoate cpds. - including
one in (semi)crystalline form, as nucleant, for paper, fabric, hygiene
articles, sustained drug or agrochemical release system, adhesive, etc.
PI WO 9428070 A1 19941208 (199503)* EN 18[0]
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE
W: AT AU BB BG BR BY CA CH CN CZ DE DK ES FI GB GE HU JP KG KP KR KZ
LK LU LV MD MG MN MW NL NO NZ PL PT RO RU SD SE SI SK TJ TT UA US
UZ VN
AU 9467275 A 19941220 (199512) EN
FI 9505645 A 19951123 (199607) FI
NO 9504748 A 19951123 (199607) NO
EP 700418 A1 19960313 (199615) EN [0]
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
JP 08510498 W 19961105 (199708) JA 22[0]
AU 683466 B 19971113 (199803) EN
US 5693389 A 19971202 (199803) EN 5[0]
IN LIGGAT J J

L37 ANSWER 50 OF 57 WPIDS COPYRIGHT 2009 THOMSON REUTERS on STN
TI New strain ATCC 55366 od Methylobacterium extorquens - producing high
yields of poly-beta-hydroxybutyrate polymer when grown on methanol
PI US 5302525 A 19940412 (199417)* EN 14[0]
CA 2083621 A 19940525 (199431)# EN
CA 2083621 C 20000620 (200043)# EN
IN BOURQUE D; GROLEAU D; POMERIEAU Y; POMERIEAU Y

L37 ANSWER 51 OF 57 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN
TI Equipment and operation for fermentative PHB production using
gaseous substrate to guarantee safety from explosion;
poly-beta-hydroxybutyrate production by Alcaligenes eutrophus by gas
phase fermentation of hydrogen, oxygen and carbon dioxide
SO J.Chem.Eng.Jpn.; (1993) 26, 2, 225-27
CODEN: JCEJAC
AU Ishizaki A; Tanaka K; Takeshita T; Kanemaru T; Shimoji T; Kawano T
AN 1993-07106 BIOTECHDS

L37 ANSWER 52 OF 57 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN

TI Physiologically motivated strategies for control of the fed-batch
cultivation of recombinant *Escherichia coli* for phenylalanine production;
effect of glucose feeding, tyrosine feeding, oxygen supply; fed-batch
culture; systems control
SO J.Ferment.Bioeng.; (1991) 71, 5, 350-55
CODEN: JFBIEX
AU Konstantinov K B; Nishio N; Seki T; *Yoshida T
AN 1991-10001 BIOTECHDS

L37 ANSWER 53 OF 57 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN
TI Kinetics and effect of nitrogen source feeding on production of
poly-beta-hydroxybutyric acid by fed-batch culture;
using *Protomonas extorquens*
SO Appl.Microbiol.Biotechnol.; (1986) 24, 5, 366-69
CODEN: EJABDD
AU Suzuki T; *Yamane T; Shimizu S
AN 1986-12147 BIOTECHDS

L37 ANSWER 54 OF 57 LIFESCI COPYRIGHT 2009 CSA on STN
TI Characterization of intracellular accumulation of poly- beta
-hydroxybutyrate (PHB) in individual cells of *Alcaligenes*
eutrophus H16 by flow cytometry.
SO BIOTECHNOL. BIOENG., (1984) vol. 26, no. 8, pp. 982-987.
AU Srienc, F.; Arnold, B.; Bailey, J.E.
AN 84:26678 LIFESCI

L37 ANSWER 55 OF 57 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Extraction of poly(beta-hydroxybutyric acid)
SO Brit. UK Pat. Appl., 4 pp.
CODEN: BAXXDU
IN Walker, John
AN 1982:545715 HCAPLUS
DN 97:145715
OREF 97:24295a,24298a

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2089823	A	19820630	GB 1981-35734	19811126
GB 2089823	B	19840627		

L37 ANSWER 56 OF 57 HCAPLUS COPYRIGHT 2009 ACS on STN
TI Extraction of poly(3-hydroxybutyric acid) from microbial cells
SO Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
IN Holmes, Paul Arthur; Wright, Leonard Frederick; Alderson, Barry; Senior,
Peter James
AN 1980:619324 HCAPLUS
DN 93:219324
OREF 93:35023a,35026a

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 15123	A1	19800903	EP 1980-300431	19800214
EP 15123	B1	19821222		
R: BE, CH, DE, FR, GB, IT, LU, NL				
ZA 8000803	A	19810624	ZA 1980-803	19800212
EP 36699	A1	19810930	EP 1981-200352	19800214
EP 36699	B1	19830202		
EP 36699	B2	19870902		
R: BE, CH, DE, FR, GB, IT, LU, NL				
AU 8055606	A	19800828	AU 1980-55606	19800215
AU 529981	B2	19830630		
DK 8000733	A	19800822	DK 1980-733	19800220
JP 55118394	A	19800911	JP 1980-21041	19800221

RO 79661	A1	19820817	RO 1980-100264	19800221
US 4324907	A	19820413	US 1980-125483	19800222

L37 ANSWER 57 OF 57 HCAPLUS COPYRIGHT 2009 ACS on STN
 TI Protein quality of the hydrogen-oxidizing bacterial strain *Alcaligenes eutrophus* in broiler feed. Part 1: Growth and feed conversion with increasing replacement of soybean meal with bacterial mass
 SO Archiv fuer Gefluegelkunde (1979), 43(4), 129-38
 CODEN: AGEFAB; ISSN: 0003-9098
 AU Greife, H.; Molnar, S.; Guenther, K. D.
 AN 1980:21018 HCAPLUS
 DN 92:21018
 OREF 92:3583a,3586a

=> d ab 15,17,20,22,24,26,29,35,45,47,48,53,57

L37 ANSWER 15 OF 57 MEDLINE on STN DUPLICATE 5
 AB Polyhydroxyalkanoate (PHA) was produced from a starchy wastewater in a two-step process of microbial acidogenesis and acid polymerization. The starchy organic waste was first digested in a thermophilic upflow anaerobic sludge blanket (UASB) reactor to form acetic (60-80%), propionic (10-30%) and butyric (5-40%) acids. The total volatile fatty acids reached 4000 mg l⁻¹ at a chemical oxygen demand (COD) loading rate of 25-35 g l⁻¹ day⁻¹. A carbon balance indicates that up to 43% of the organic carbon in the starchy waste went to the organic acids and the rest to biogas, volatile suspended solids and residual sludge accumulated in the reactor. The acid composition profile was affected by COD loading rate: a medium rate around 9 g l⁻¹ day⁻¹ gave a high propionic acid content (29% wt) and a high rate around 26 g l⁻¹ day⁻¹ led to a high butyric acid content (34% wt). The acids in the effluent solution after microfiltration were utilized and polymerized into PHA by bacterium *Alcaligenes eutrophus* in a second reactor. Fifty grams of PHA was produced from 100 g total organic carbon (TOC) utilized, a yield of 28% based on TOC, which is comparable with 55 g PHA per 100 g TOC of pure butyric and propionic acids used. PHA formation from individual acids was further investigated in a semi-batch reactor with three acid feeding rates. With a limited nitrogen source (80-100 mg NH₃ per liter), the active biomass of *A. eutrophus*, not including the accumulated PHA in cells, was maintained at a constant level (8-9 g l⁻¹) while PHA content in the cell mass increased continuously in 45 h; 48% PHA with butyric acid and 53% PHA with propionic acid, respectively. Polyhydroxybutyrate was formed from butyric acid and poly(hydroxybutyrate-hydroxyvalerate) formed from propionic acid with 38% hydroxyvalerate.

L37 ANSWER 17 OF 57 SCISEARCH COPYRIGHT (c) 2009 The Thomson Corporation on STN DUPLICATE 6
 AB The effects of propionic acid feeding strategy on production of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) [P(3HB-co-3HV)] were studied with *Ralstonia eutropha*. Flask culture revealed that the time and concentration of propionic acid addition had significant effects on cell growth, P(3HB-co-3HV) synthesis, and HV fraction in the copolymer. In fed-batch culture, a low ratio of propionic acid to glucose (P/G) led to high dry cell weight (DCW), P(3HB-co-3HV) content and productivity, but low HV unit fraction. A high P/G ratio led to, on the other hand, high HV unit fraction but the low P(3HB-co-3HV) content and productivity. The specific P(3HB-co-3HV) synthetic rate and the specific HV synthetic rate declined in fed-batch cultures, which deteriorated with high P/G feeding due to the inhibitory effect of

propionic acid accumulated in the culture broth. According to the non-steady state synthesis of P(3HB-co-3HV) by *R. eutropha*, an optimal feeding strategy to control the propionic acid accumulation was developed and demonstrated. The propionic acid feeding rate was reduced with time, and DCW, P(3HB-co-3HV) concentration, P(3HB-co-3HV) content and RV fraction in P(3HB-co-3HV) reached 52.1 g l⁻¹, 40.8 g l⁻¹, 78.3% and 16.2 mol%, respectively. P(3HB-co-3HV) productivity was 0.74 g l⁻¹ h⁻¹. (C) 2001 Elsevier Science B.V. All rights reserved.

- L37 ANSWER 20 OF 57 MEDLINE on STN DUPLICATE 7
 AB *Pseudomonas oleovorans* ATCC 29347 was grown in chemostat culture at different dilution rates with mineral media varying in their ratios of octanoate to ammonia (C(0)/N(0) ratio). At all dilution rates tested, three distinct growth regimes were observed: (i) carbon limitation with NH₄(+) in excess at low C(0)/N(0) ratios, (ii) purely nitrogen-limited growth conditions at high C(0)/N(0) ratios with residual octanoate in the culture supernatant, and (iii) an intermediate zone of dual-nutrient-limited growth conditions where both the concentration of octanoate and that of ammonia were very low. The dual-nutrient-limited growth zone shifted to higher C(0)/N(0) ratios with decreasing dilution rates, and the extension of the dual-nutrient-limited growth zone was inversely proportional to the growth rate. The cells accumulated the storage compound medium-chain-length poly[(R)-3-hydroxyalkanoate] (mcl-PHA) during dual (C and N)-nutrient-limited and N-limited growth conditions. Within the dual-nutrient-limited growth zone, the cellular mcl-PHA contents increased when the C(0)/N(0) ratio in the feed was increased, whereas the cellular mcl-PHA level was independent from the feed C(0)/N(0) ratio during N-limited growth. The monomeric composition of the accumulated mcl-PHA was independent of both the dilution rate and the feed C(0)/N(0) ratio and consisted of 12 mol% 3-hydroxyhexanoic acid and 88 mol% 3-hydroxyoctanoic acid. Accumulation of mcl-PHA led to an increase in the cellular C/N ratio and to changes in elemental growth yields for nitrogen and carbon.
- L37 ANSWER 22 OF 57 SCISEARCH COPYRIGHT (c) 2009 The Thomson Corporation on STN DUPLICATE 8
 AB Fed-batch culture of *Alcaligenes latus*, ATCC 29713, was investigated for producing the intracellular bioplastic poly(beta-hydroxybutyric acid), PHB. Constant rate feeding, exponentially increasing feeding rate, and pH-stat fed batch methods were evaluated. pH-stat fed batch culture reduced or delayed accumulation of the substrate in the broth and led to significantly enhanced PHB productivity relative to the other modes of feeding. Presence of excessive substrate appeared to inhibit PHB synthesis, but not the production of cells. In fed-batch culture, the maximum specific growth rate (0.265 h⁻¹) greatly exceeded the value (0.075 h⁻¹) previously observed in batch culture of the same strain. Similarly the maximum PHB production rate (up to 1.15 g . l⁻¹ . h⁻¹) was nearly 8-fold greater than values observed in batch operations. Fed-batch operation was clearly superior to batch fermentation for producing PHB. A low growth rate was not a prerequisite for PHB accumulation, but a reduced or delayed accumulation of substrate appeared to enhance PHB accumulation. Under the best conditions, PHB constituted up to 63% of dry cell mass after 12 h of culture. The average biomass yield coefficient on sucrose was about 0.35, or a little less than in batch fermentations. The highest PHB concentrations attained were about 18 g . l⁻¹.

AB A mixed culture system was considered in the present research where sugars such as glucose were converted to lactate by *Lactobacillus delbrueckii* and the lactate was converted to poly beta-hydroxybutyrate (PHB) by *Ralstonia eutropha* in one fermentor. Based on the experimental studies on the effect of lactate concentration on the cell growth of both microorganisms, the lactate concentration was controlled at less than 5 g/l using an on-line enzymatic lactate and glucose sensors with the FIA (flow injection analysis) system, and by manipulating the glucose feeding rate. Since *L. delbrueckii* prefers anaerobic conditions while *R. eutropha* prefers aerobic conditions, we studied the effect of DO concentration on fermentation characteristics of each microorganism. For the mixed culture, we considered the control scheme of a two inputs and three outputs multivariable system. It was experimentally shown that the periodic fermentation resulted in superior PHB yield with relatively high productivity as compared with the cases where DO concentration was controlled to be constant either at less than 1 ppm or 3 ppm.

L37 ANSWER 26 OF 57 MEDLINE on STN DUPLICATE 10

AB On the basis of analysis of PHB fermentation processes, the effects of ammonium sulfate feeding rate at PHB formation period on the PHB accumulation by *Alcaligenes eutrophus* were investigated. It was shown that the complete absence of nitrogen source at PHB formation phase would lead to the decline of PHB synthetic activity, and the obvious influences of different nitrogen feeding rate on PHB synthesis were observed. Higher PHB content, but relative lower cell dry weight, PHB concentration and PHB productivity could be obtained at slower nitrogen feeding rate. The excessive nitrogen feeding rate resulted in the drop of PHB content, which led to the decrease of PHB concentration and PHB productivity. The better results could be achieved when the ammonium sulfate feeding rate was set at around 0.5 g/h.

L37 ANSWER 29 OF 57 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN
AB Acetic acid had an inhibitory effect on *Alcaligenes eutrophus* ATCC 17699, but could be utilized as a C-source for cell growth and poly-beta-hydroxybutyrate (PHB) production. The primary factors affecting tolerance of *A. eutrophus* to acetate were the acetate concentration, the cell mass concentration and the nutrients. Maintaining a high cell mass concentration and a low acetate concentration (below 3 g/l) in the fermentor minimized the adverse effect of acetate. In stationary phase with negligible cell growth, the specific rates of acetate utilization and PHB formation based on active biomass (ABM) were 85 mg acetate/g ABM.hr and 8 mg PHB /g ABM.hr, respectively. The acetate uptake rate increased by 10-30% at high acetate concentrations of 5-10 g/l. In the exponential growth phase, the acetate utilization rate reached 160 mg/g ABM.hr and PHB production about 30 mg/g ABM.hr. Since a high final PHB content in cells is desired and can only be achieved in the non-actively-growing cells, an optimal process should have a variation in the cell growth rate by controlling the feeding of growth nutrients with time. (14 ref)

L37 ANSWER 35 OF 57 MEDLINE on STN DUPLICATE 15

AB A locally isolated soil microorganism identified as *Erwinia* sp. USMI-20 has been found to produce poly(3-hydroxybutyrate), P(3HB), from either palm oil or glucose and its copolymer poly(3-hydroxybutyrate-co-3-hydroxyvalerate), P(3HB-co-3HV), from a combination of palm oil and a second carbon source of either one of the following compounds: propionic acid, n-propanol, valeric acid

and n-pentanol. It was found that *Erwinia* sp. USMI-20 could produce P(3HB) up to 69 weight% polymer content with a dry cell weight of 4.4 g/l from an initial amount of 14.5 g/l of glucose followed by a feeding rate of glucose at 0.48 g/h glucose. On the other hand, the bacteria can achieve 46 weight% of P(3HB) and a dry cell weight of 3.6 g/l from a batch fermentation in a 10-l fermentor from an initial concentration of 4.6 g/l of palm oil. Further characterisation of the polymer production was also carried out by using different types of palm oil. Among the different palm oils that were used, crude palm oil was the best lipid source for P(3HB) production as compared to palm olein and palm kernel oil. In the production of the copolymer, P(3HB-co-3HV), the highest mole fraction of 3-HV units could be as high as 47 mol% from a single feeding of valeric acid upon initial growth on palm oil.

- L37 ANSWER 45 OF 57 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN
 AB To improve biomass and poly-beta-hydroxybutyrate (PHB) concentration, fed-batch fermentation using a hollow fiber membrane was introduced. A culture of *Alcaligenes eutrophus* NCIB 1199 was transferred to a 2.5 l jar fermentor containing (g/l): 6.7 Na₂HPO₄·H₂O, 1.5 KH₂PO₄, 0.2 MgSO₄·7H₂O, 60 mg ferrous ammonium citrate, 10 mg CaCl₂·2H₂O, 1 g yeast extract, and 1 ml trace element solution. Glucose and ammonium phosphate were used as a C- and N source, and their initial concentrations were 30-50 g/l and 2 g/l, respectively. Incubation was at 34 deg, pH 6.8-7.0, 500 rpm, and an air flow rate of 1 l/min. The feeding medium was started at 14 hr when the biomass concentration in the broth was 10 g/l, and the feeding rate was 10 ml/hr. (NH₄)₂HPO₄ concentration was fed intermittently and maintained its concentration at 0.5-1.3 g/l. At 29 hr (NH₄)₂HPO₄ supply was stopped to promoter PHB accumulation. The cell and PHB concentration reached 47.6 g/l and 28.0 g/l, respectively. The mass transfer coefficient was increased by the flow rate of tube side or shell side, whereas the tube velocity higher than 0.6 cm/sec did not affect the mass transfer coefficient. (13 ref)
- L37 ANSWER 47 OF 57 HCAPLUS COPYRIGHT 2009 ACS on STN
 AB A process is disclosed for accumulating poly-3-hydroxybutyric acid in bacterial cells by continuously fermenting a MeOH-assimilating bacterium in a single fermentation vessel by using MeOH as C source at a limited feeding rate of N, P, or K such that the average retention time for the fermentation is >10 h.
- L37 ANSWER 48 OF 57 SCISEARCH COPYRIGHT (c) 2009 The Thomson Corporation on STN
 DUPLICATE 20
 AB Production of poly(beta-hydroxybutyrate-co-beta-hydroxyvalerate) [poly(HB-co-HV)] from glucose and propionic acid was studied in a two-stage fed-batch fermentation using *Alcaligenes eutrophus* NCIMB 11599. When either glucose became sufficient or the feeding rate of propionic acid decreased, production of poly(HB-co-HV) increased but concomitantly resulted in a reduced fraction of HV. During the copolymer accumulation stage, the specific production rate of hydroxyvalerate (HV) increased up to 0.013 (g-HV/g-RCM/h) but it decreased as propionic acid was accumulated. Control of the propionic acid concentration in the medium, therefore, is considered to be one of the most important operating parameters for production of poly(HB-co-HV) with a higher HV fraction. A high titre of poly(HB-co-HV) (85.6 g/l) with HV fraction of 11.4 mol% could be obtained in 50 h by controlling the propionic acid concentration at 1 to 4 g/l.
- L37 ANSWER 53 OF 57 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN
 AB *Protonas extorquens* sp. K was grown in a complex salts medium with methanol as sole C-source. The kinetics of poly-beta-hydroxybutyric acid

(PHB) production was studied in fed-batch cultures. The presence of a N-source was required in growth and PHB production phases. The effect of ammonia feeding on PHB production was studied. Ammonia water was initially supplied at a low constant feeding rate after the growth phase, in which the cell mass concentration reached 60 g/l. Feeding with a small quantity of ammonia gave a more rapid increase in intracellular PHB than that obtained without N-source feeding. However, excessive feeding of ammonia resulted in degradation of accumulated PHB and reduced microbial PHB synthetic capacity. A kinetic model of PHB accumulation is proposed. (10 ref)

L37 ANSWER 57 OF 57 HCAPLUS COPYRIGHT 2009 ACS on STN

AB Broiler chicks given corn-wheat-soybean meal-based feed in which A. eutrophus PHB-4 H 16 protein (nonnucleic acid) N replaced 10-60% of feed protein N (bacteria at 3.29, 6.58, 10.1, 15.1 and 20.1% of feed) had growth rates 100, 97.0, 100, 96.3 and 74.4% of those of controls, resp. in 28-day expts. Feed utilization was 1.39, 1.40, 1.35, 1.41 and 1.51 kg/kg weight gain as compared with 1.45 and 1.48 for controls. At 45% of feed protein N, the bacterial N had no effect on taste of the meat. The recommended level for A. eutrophus in feed for chicks is $\leq 30\%$ of feed protein.

=> log y

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	206.15	206.37
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-1.64	-1.64

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